

21, 32 Cutter

AUG 6 1918

**Save \$9.00 Per Post Annually In
Maintenance Cost By Changing The
Tops Of Cluster Posts To Single Light**

COST SAVED IN SIX MONTHS

**CHANGE
THIS TOP**

**TO
THIS TOP**

CUTTER

*Modern Street Lighting Fixtures
with Mazda "C" Lamps Conserve Coal-
Labor-Freight and Maintenance*



CONSERVE COAL

If the fifty thousand Cluster Posts in the United States were changed to single light using Mazda "C" Lamps, the saving in coal alone would amount to approximately forty thousand tons per year.

GEORGE CUTTER COMPANY
SOUTH BEND, INDIANA

CHICAGO
LOS ANGELES

DETROIT
SAN FRANCISCO

NEW YORK
SEATTLE



Fig. 1.—Single-light Posts with high efficiency Mazda "C" Lamp increase visibility by uni-directional light distribution and eliminate the confusing effects of clusters.



Fig. 2.—Cluster Posts do not afford the illumination necessary for safety and comfort on busy streets at night. Cluster lighting is confusing and expensive in operation and maintenance.

Join the Conservation Movement

Since the introduction of Mazda "C" lamps, single-light standards have been selected in preference to cluster posts for practically all modern street lighting installations. Four principal reasons are given:

First: *Increased efficiency in lighting.* Conditions of visibility are far better with uni-directional light distribution from single light standards than with the low intensity lighting and confusing effects of clusters. The great amount of light absorbed by five globes as compared with that of one High Efficiency Sol-lux Globe shows a great advantage for the latter.

Second: *Lower operating expense.* With the Mazda "C" lamp, the same illumination can be obtained with lower current consumption or more and better light can be secured for the same current consumption.

Third: *Lower maintenance cost.* Single light post systems are less expensive to maintain than clusters. The cost of cleaning glassware, replacing broken globes and burned out lamps and repainting the posts is much lower for single light standards than for cluster posts.

Fourth: *Improved appearance by day and by night.* The single light standard is more artistic than the cluster post. Streets lighted with single light standards are more attractive than those cluttered with five-light posts.

Single light standards are now universally conceded to be correct for modern street illumination. The advantages are so important that it pays to convert the obsolete clusters into single light posts.

Change Clusters to Single Light Posts

The ordinary cluster post may be quickly and easily converted to a modern single light standard, and the following advantages secured:

1. **Operating Cost Reduced.** The five-light cluster post requires four 60-watt lamps and one 100-watt lamp consuming 340 watt hours per hour or 1360 K. W. H. per year. On the same basis of 4,000 hours burning, one 200-watt Mazda "C" lamp consumes only 800 K.W. H. of electrical energy, an annual saving of 560 K.W. H. per post. **At 1c per K. W. H., the annual saving amounts to \$5.60 per post.**

2. **Lower Maintenance Cost.** The cost of upkeep—cleaning glassware, replacing broken globes and burned-out lamps is 30% greater for the cluster post than for the single light standard. For the average installation of 100 posts, the following comparison may be made:

	5-Light Cluster	Single Light
Cost of cleaning glassware.....	\$ 95.00	\$ 19.00
Cost of replacing broken globes (globes and labor).....	84.00	26.40
Cost of replacing burned-out lamps (lamps and labor).....	829.00	654.00
Cost of repainting posts.....	125.00	100.00
Total maintenance cost.....	1133.00	799.40
Maintenance cost per post.....	11.33	7.99
Saving in maintenance alone per post per year.....	3.34	

3. **Conserve Coal.** Three pounds of a fair grade of coal per K. W. H. is the average for lighting plants throughout the country. By changing 100 cluster posts to single light standards, approximately 84 tons of coal will be saved annually. This amount of coal will warm the homes of many families and help to meet the coal shortage, reducing the burden placed on the transportation and distribution systems of our country. There are approximately 50,000 cluster posts in the United States, representing a possible saving of not less than forty thousand tons of coal per year. Every city and town now using cluster posts should help to save coal by changing the clusters to single light units.

Reduce Operating and Maintenance Cost—Conserve Coal—
Increase Illumination—Improve the appearance day and night

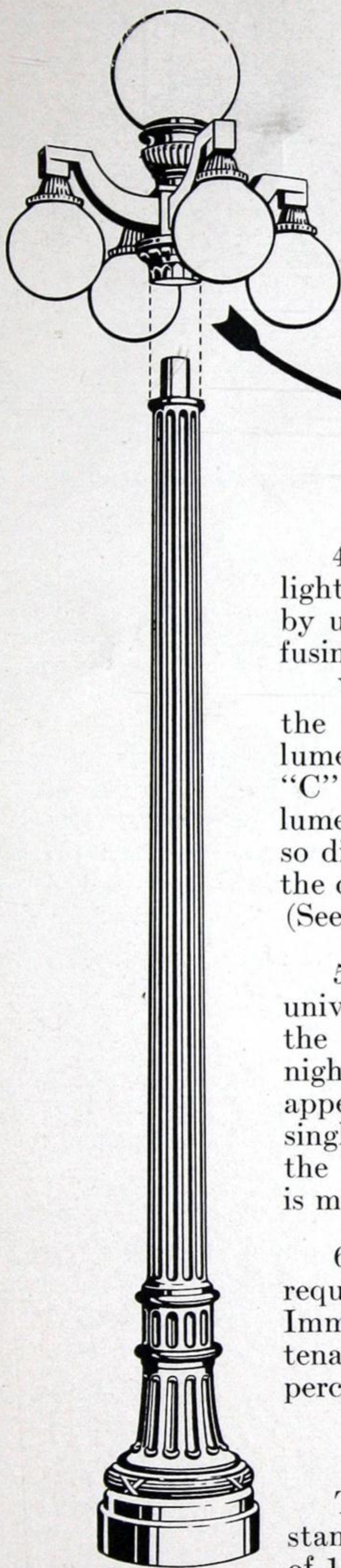


Fig. 3

**Save \$9.00
Per Post Annually
In Maintenance Cost
By Changing This
Cluster Top To
Single Light**



Fig. 4

4. **Increase the Effective Illumination.** Single light units increase visibility on the streets at night by uni-directional light distribution. Clusters are confusing.

When consideration is given to the light absorbed by the globes, the ordinary 5-light cluster post emits 1350 lumens in the useful directions. The 200-watt Mazda "C" lamp in the Cutter Sol-lux top gives 1867 useful lumens, an increase of 26 percent useful illumination so distributed on the streets and sidewalks as to improve the conditions of visibility for both pedestrian and driver. (See Curves at top of page 4).

5. **Improved Appearance.** Another advantage universally recognized for the single light standard is the improved appearance of the street by day and by night. The cluster post gives the street a crowded appearance, hindering rather than aiding traffic. The single light standard enhances the appearance of both the street and the surroundings. The standard itself is more artistic than the cluster post.

6. **Meet the Labor Shortage.** Very little time is required to convert clusters to single light standards. Immediately afterwards, the time required for the maintenance and upkeep of the system is reduced at least 75 percent.

Save the Cost in Six Months

The cost of converting cluster posts to single light standards may be estimated for the average installation of 100 posts as follows:

Cost of New Top with Multiple Socket, including labor cost of installation....	\$11.50	\$11.50
Less scrap value of Cross-Arm and five globeholders.....	1.50
Value of five Ball Globes less cost of cleaning.....	7.50
	9.00	9.00

Actual cost of change, \$4.50 per post.

Annual saving effected by change $\$5.60 + \$3.34 = \$8.94$.

Time required to save actual cost of change, 6 months.

\$4.50

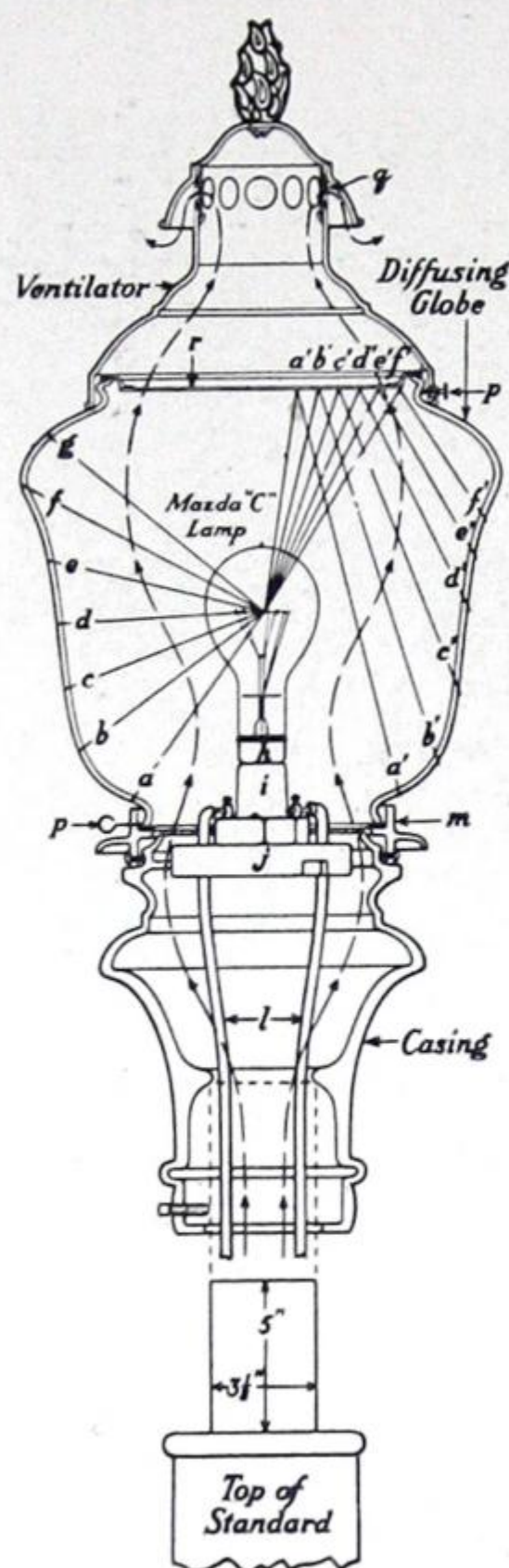
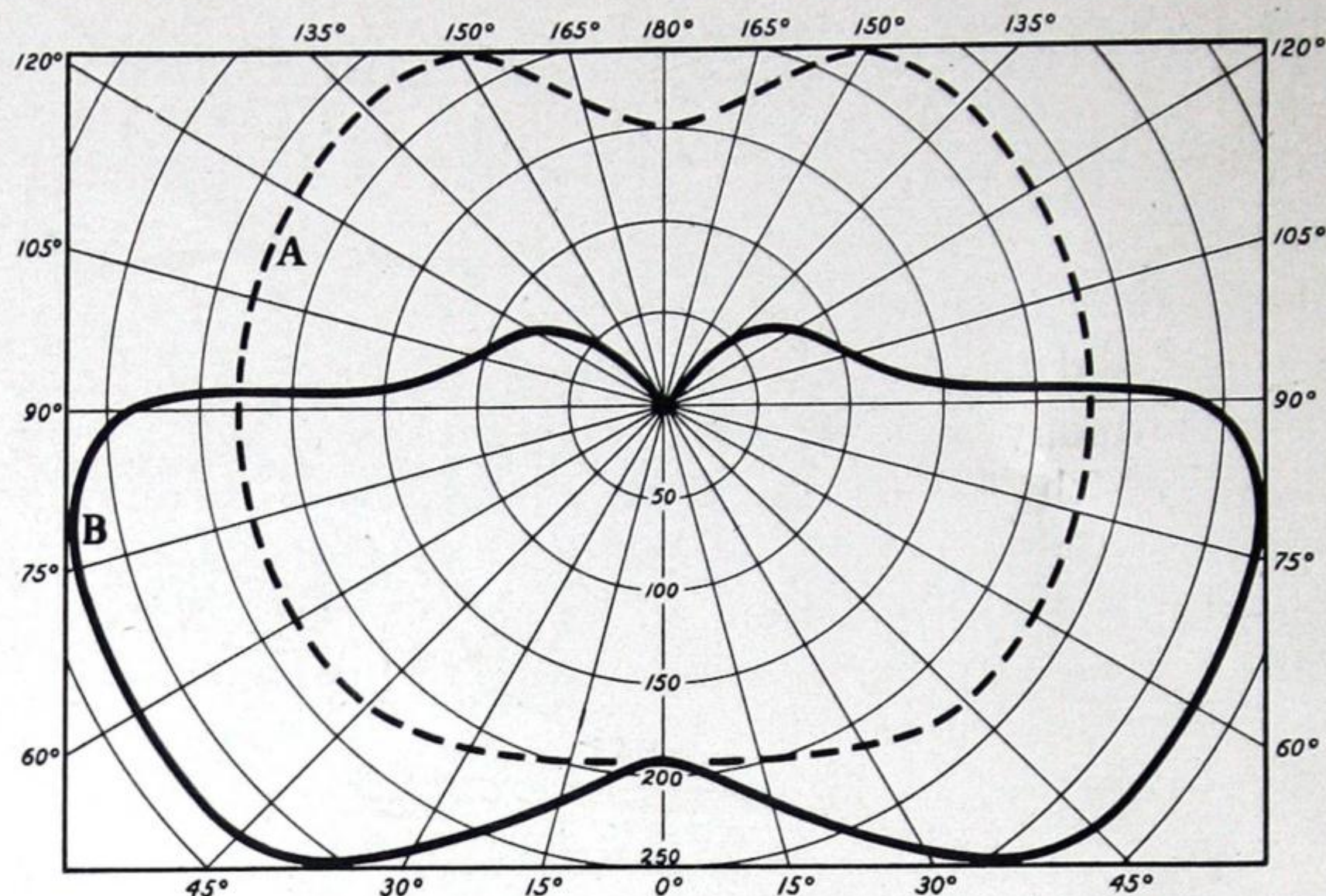


Fig. 5.—Sol-lux Top
(Sectional view)



Curve A.—Shows light distribution of 5-light cluster consisting of four 60-watt Lamps and one 100-watt Lamp enclosed in diffusing globes. Efficiency 40 %.

Curve B.—Shows light distribution of one 200-watt Mazda "C" Lamp in Cutter "Sol-lux" High Efficiency Globe. Efficiency 66 %.

How to Change Clusters to Single Light Standards

The change from clusters to single light standards is a simple one. The Cross-Arm is removed from the top of the column and a suitable casing or globeholder mounted in its place. The same wires leading to the sockets in the Cross-Arm are cut off to the required length and then connected to the socket in the single light top.

The columns of Cutter posts terminate in a shank $3\frac{1}{2}$ inches in diameter and 5 inches high. The casings and globeholders of Cutter Ornamental Post Tops are designed to fit this shank. No drilling or threading of the column and casing are necessary. For all other posts, special supports or adapters will be provided when required to support the Cutter Post Tops illustrated in this bulletin. Send a sketch showing the shape and dimensions of the end of the column on which the Cross-Arm rests. Complete specifications will then be furnished by our Engineering Department. If a photograph or drawing of the post is furnished, recommendations will be made for the most suitable combination of post and lighting unit.



Fig. 6.—Cutter Sol-lux
Senior Top

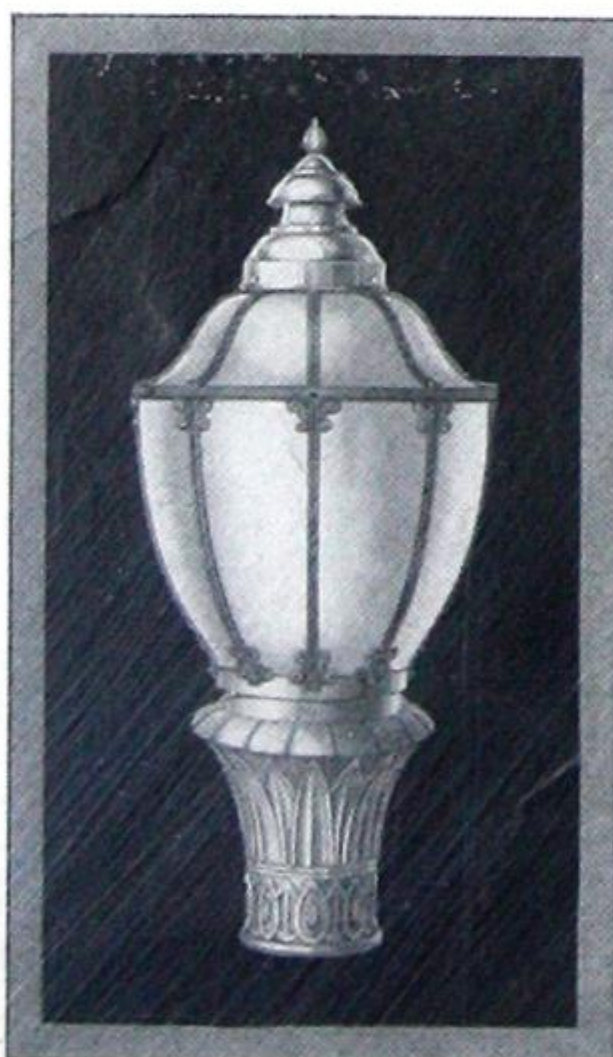


Fig. 7.—Cutter Egyptian
Senior Top

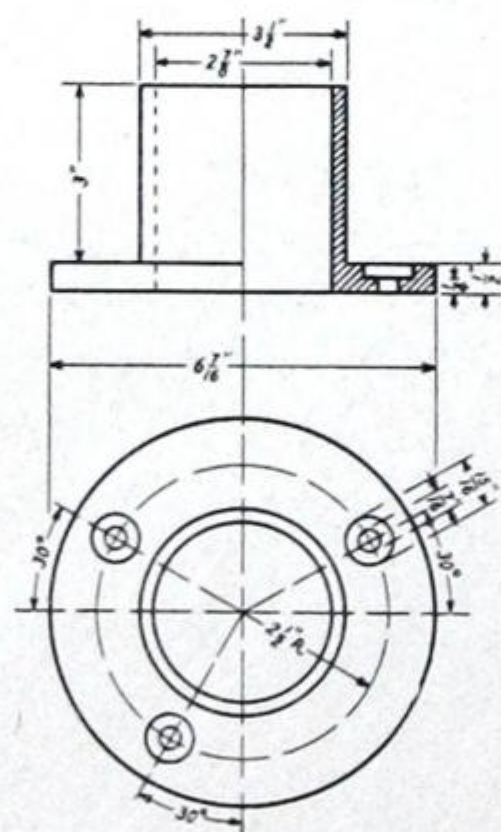


Fig. 9.—Adapter Plate with
 $3\frac{1}{2}$ inch (diam.) Shank to
fit Sol-lux Casings.

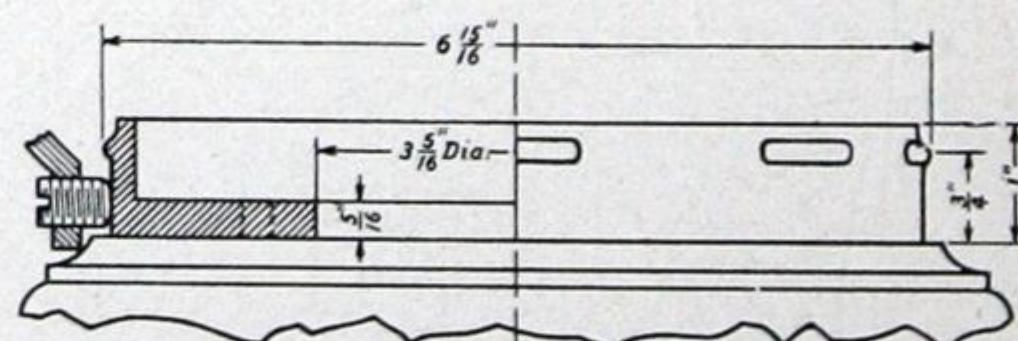


Fig. 10.—Special Adapter Plate to fit top of concrete
Post and support Octagonal Casing.

Advantages of Cutter Fixtures

In selecting ornamental lighting fixtures the following points should be considered as relating to the appearance and efficiency of the unit and the maintenance of the complete installation:

- (1) Harmony of design in the fixture itself and in combination with the standard. A distinct outline of the globe at night is essential for artistic appearance.
- (2) Quality and illuminating efficiency of the glassware.
- (3) Proper diffusion and distribution of the light.
- (4) Insulation of all live metal parts.
- (5) Ventilation to insure maximum lamp life.
- (6) Protection of lamp from adverse weather conditions and from becoming covered with insects.
- (7) Method of assembling fixture parts which facilitate cleaning glassware and reflecting surfaces easily and quickly.
- (8) Reduction of globe breakage to a minimum.

Parts for Cutter Sol-lux Fixtures

Referring to Fig. 5, *a, b, c, d, e, f,* and *g* represent light direct from the lamp filament as it enters the diffusing medium. Notice how the light is distributed over the entire surface. Because of the smaller surface beginning with *a* and increasing to *g*, the lower portion of the globe has a higher surface brightness than the upper part, a desirable feature from the standpoint of maximum illumination as well as appearance. At night there is a contrast between the curved portion *f* and other parts of globe, but there are no shadows; the change in surface brightness is gradual from *a* to *g*.

a', b', c', d', e', and *f'* represent light reflected from the flat porcelain enameled reflector *r*. This light also is uniformly distributed within the globe.

h represents the base of the Mazda "C" lamp.

i represents the medium screw base multiple socket for use with 200-watt multiple lamps. This socket may be replaced with the Regent Film Socket for straight series lamps or with mogul screw multiple socket for 300-watt or larger multiple lamps.

j represents the porcelain disc insulator supporting the socket.

l shows the cable connecting the lamp socket to the underground circuit.

m refers to the globe ring having spring globeholder *p*, and felt globe seat *o*. The spring globeholder reduces maintenance costs by protecting globes from breakage. Globes may easily be broken by careless tightening of setscrews, the spring globeholder eliminates this danger as well as that of breakage as a result of vibration.



Fig. 11.—Ventilator with Reflector



Fig. 12.—Sol-lux Senior Globe



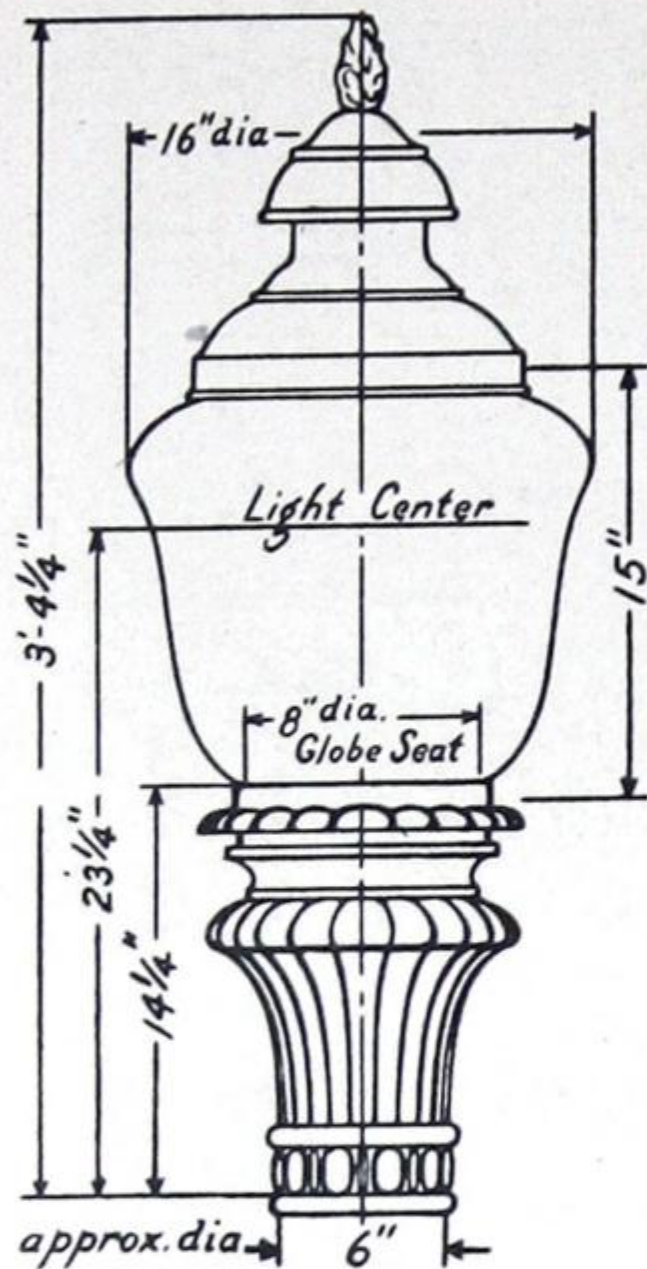
Fig. 13.—Porcelain Disc Insulator with medium Screw Socket and 200-watt Mazda "C" Lamp



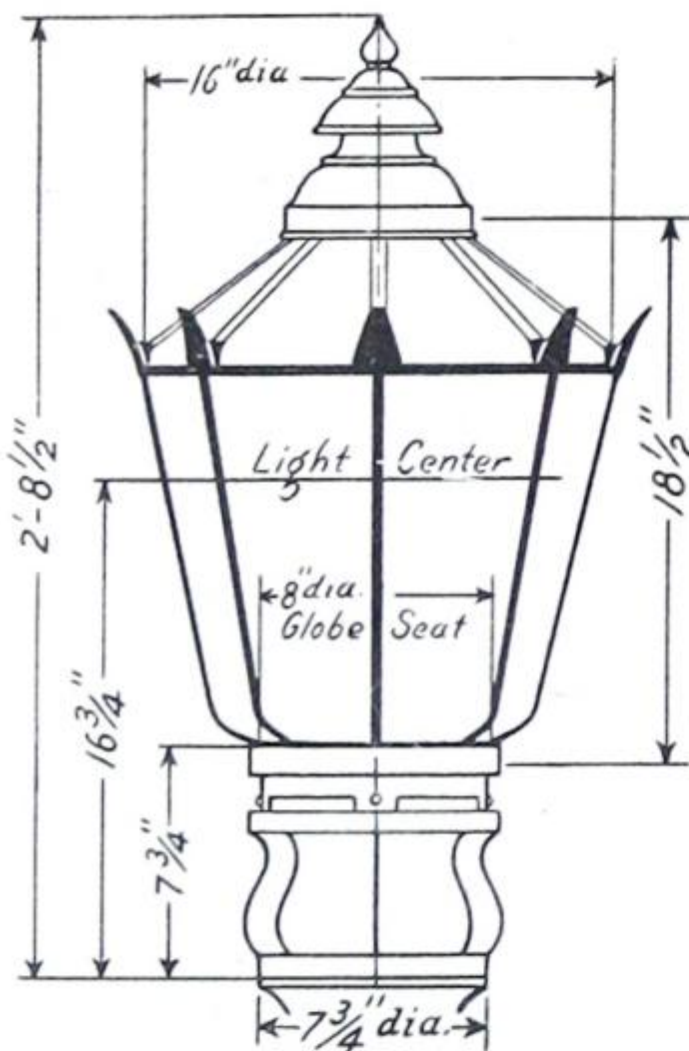
Fig. 14.—Egyptian Senior Casing

Cutter "Senior" Ornamental Tops

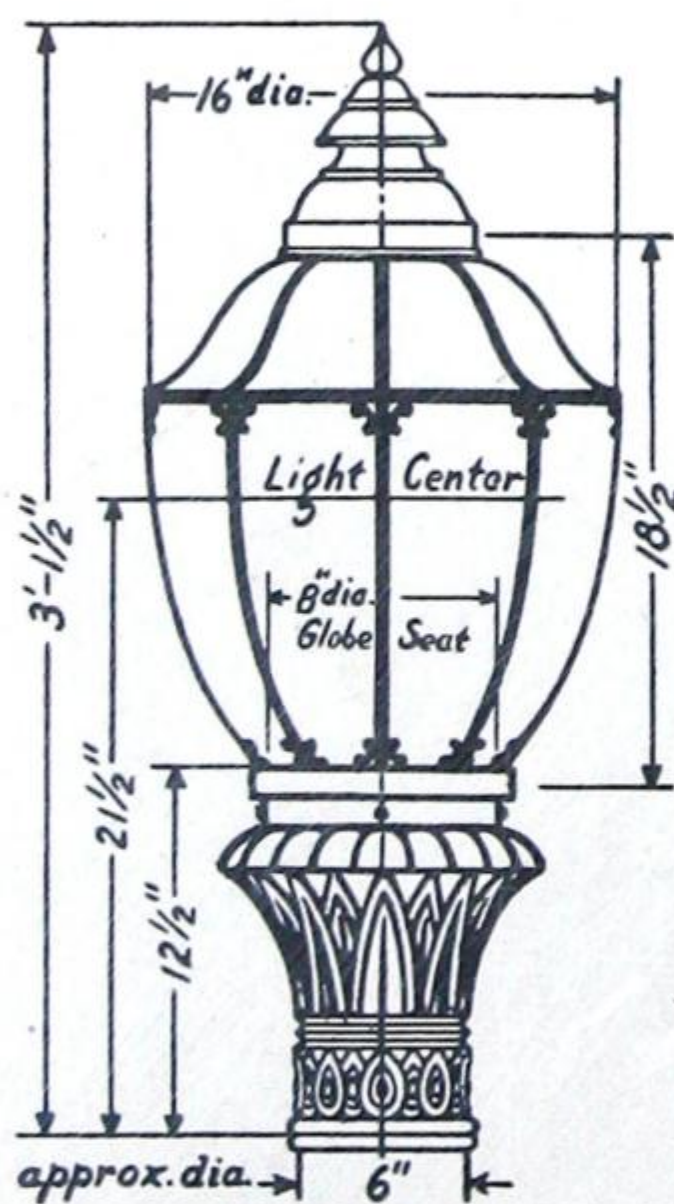
Designed for Use with 300 to 1,000-watt Multiple Lamps and 400, 600 and 1,000-candlepower Series Mazda "C" Lamps



Sol-lux Senior Top



Octagonal Senior Top



Egyptian Senior Top

Sol-lux Senior Tops

Trade No.	Description	Shipping Weight	Price Each
22926	Sol-lux Senior top, including casing, porcelain disc insulator, globe, ventilator and reflector, and mogul screw multiple socket.....	65	\$24.00
22927	Same, but with Regent film series socket.....	66	25.00
22928	Same, but with mogul socket and *compensator for 15-ampere, 400-candlepower lamps.....	72	34.00
22929	Same, but with mogul socket and *compensator for 20-ampere, 600-candlepower lamps.....	74	35.00
22930	Same, but with mogul socket and *compensator for 20-ampere, 1000-candlepower lamps.....	77	37.00

Parts for Sol-lux Senior Tops

22175	Casing, with 8-inch globeholder.....	40	6.50
22166	† Porcelain disc insulator, without socket.....	3	.70
22167	Sol-lux Senior globe.....	13	8.50
22168	Sol-lux Senior ventilator with reflector.....	9	7.50

Octagonal Senior Tops

22931	Octagonal Senior top, including casing (extension capital), porcelain disc insulator, globe, trimmings, ventilator, and mogul screw multiple socket.....	47	25.00
22932	Same, but with Regent film series socket.....	48	26.00
22933	Same, but with mogul socket and *compensator for 15-ampere, 400-candlepower lamps.....	54	35.00
22934	Same, but with mogul socket and *compensator for 20-ampere, 600-candlepower lamps.....	56	36.00
22935	Same, but with mogul socket and *compensator for 20-ampere, 1000-candlepower lamps.....	59	38.00

Parts for Octagonal Senior Tops

22372	† Casing (extension capital), with 8-inch globeholder.....	17	6.50
22173	Globeholder ring, with 8-inch fitter.....	3	1.50
22166	† Porcelain disc insulator, without socket.....	3	.70
22950	Octagonal Senior globe (one piece).....	16	11.00
22556	Trimmings for globe (galvanized steel, enameled black).....	6	2.00
22557	Ventilator.....	5	4.00

Egyptian Senior Tops

22936	Egyptian Senior top, including casing, porcelain disc insulator, globe, trimmings, ventilator, and mogul screw multiple socket.....	55	25.50
22937	Same, but with Regent film series socket.....	56	26.50
22938	Same, but with mogul socket and *compensator for 15-ampere, 400-candlepower lamps.....	62	35.50
22939	Same, but with mogul socket and *compensator for 20-ampere, 600-candlepower lamps.....	64	36.50
22940	Same, but with mogul socket and *compensator for 20-ampere, 1000-candlepower lamps.....	67	38.50

Parts for Egyptian Senior Tops

22113	Casing, with 8-inch globeholder.....	30	7.00
22166	† Porcelain disc insulator, without socket.....	3	.70
22114	Egyptian Senior globe (one piece).....	15	8.50
22115	Trimmings for globe (cast iron, enameled black).....	5	4.50
22557	Ventilator.....	5	4.00

* Compensators are designed for use on 60-cycle circuits; prices for 25-cycle compensators upon application. Compensators for 600-candlepower lamps have extra taps for 400-candlepower lamps, and compensators for 1000-candlepower lamps have extra taps for 600-candlepower lamps. All compensators have taps for either 6.6 or 7.5-ampere line. Prices for special compensators will be quoted on application.

† A porcelain disc insulator should be used with each casing or globeholder listed. When ordering parts to make combinations other than those listed specify the kind of socket and coil (if any). Add to the price of the disc insulator 50 cents for a medium screw multiple socket, 80 cents for a mogul screw multiple socket and \$1.80 for a Regent film series socket. When coils are used, add to the price of the disc insulator, 80 cents for mogul screw socket with the following: \$9.50 for 250-candlepower reactance coil, \$10.00 for 400-candlepower compensator, \$11.00 for 600-candlepower compensator, and \$13.00 for 1000-candlepower compensator.

† Casing No. 22372 may be omitted when compensator or reactance coil is not used; in such cases, globeholder ring No. 22173 is used.

All prices f. o. b. factory, South Bend, Ind., and subject to Schedule "I" discounts.

Cutter "Junior" Ornamental Tops

Designed for Use with 500-watt or Smaller Multiple Lamps and 400-candlepower or Smaller Series Mazda "C" Lamps

Sol-lux Junior Tops

Trade No.	Description	Shipping Weight	Price Each
22941	Sol-lux Junior top, including casing No. 22171, porcelain disc insulator, globe, ventilator and reflector, and medium screw multiple socket.....	59	\$18.50
22942	Same, but with mogul screw multiple socket.....	59	18.80
22943	Same, but with Regent film series socket.....	60	19.80
22944	Same, but with casing No. 22176, mogul socket and *reactance coil for 6.6-ampere, 100-candlepower lamps....	62	27.00
22945	Same, but with casing No. 22176, mogul socket and *reactance coil for 6.6-ampere, 250-candlepower lamps....	64	28.30
22946	Same, but with casing No. 22176, mogul socket and *compensator for 15-ampere, 400-candlepower lamps....	66	28.80

Parts for Sol-lux Junior Tops

22176	Casing, with 8-inch globeholder.....	38	5.30
22171	xPark View 8-inch globeholder for trade numbers 22941, 22942 and 22943.....	20	3.30
22166	†Porcelain disc insulator, without socket.....	3	.70
22169	Sol-lux Junior globe.....	11	5.50
22170	Sol-lux Junior ventilator and reflector.....	7	6.50

Octagonal Junior Tops

22869	Octagonal Junior top, including casing (extension capital), porcelain disc insulator, globe, trimmings, ventilator, and medium screw multiple socket.....	44	20.70
22870	Same, but with mogul screw multiple socket.....	44	21.00
22871	Same, but with Regent film series socket.....	45	22.00
22872	Same, but with mogul socket and *reactance coil for 6.6-ampere, 100-candlepower lamps.....	49	29.20
22873	Same, but with mogul socket and *reactance coil for 6.6-ampere, 250-candlepower lamps.....	49	30.50
22949	Same, but with mogul socket and *compensator for 15-ampere, 400-candlepower lamps.....	51	31.00

Parts for Octagonal Junior Tops

22372	†Casing (extension capital), with 8-inch globeholder.....	17	6.50
22173	Globeholder ring with 8-inch fitter.....	3	1.50
22166	†Porcelain disc insulator, without socket.....	3	.70
22558	Octagonal Junior globe (one piece).....	11	7.50
22559	Trimmings for globe (galvanized steel, enameled black).....	5	1.50
22557	Ventilator.....	5	4.00

Egyptian Junior Tops

22874	Egyptian Junior top, including casing, porcelain disc insulator, globe, trimmings, ventilator, and medium screw multiple socket.....	44	18.70
22875	Same, but with mogul screw multiple socket.....	44	19.00
22876	Same, but with Regent film series socket.....	45	20.00
22877	Same, but with mogul socket and *reactance coil for 6.6-ampere, 100-candlepower lamps.....	47	27.00
22878	Same, but with mogul socket and *reactance coil for 6.6-ampere, 250-candlepower lamps.....	49	28.50
22879	Same, but with mogul socket and *compensator for 15-ampere, 400-candlepower lamps.....	51	29.00

Parts for Egyptian Junior Tops

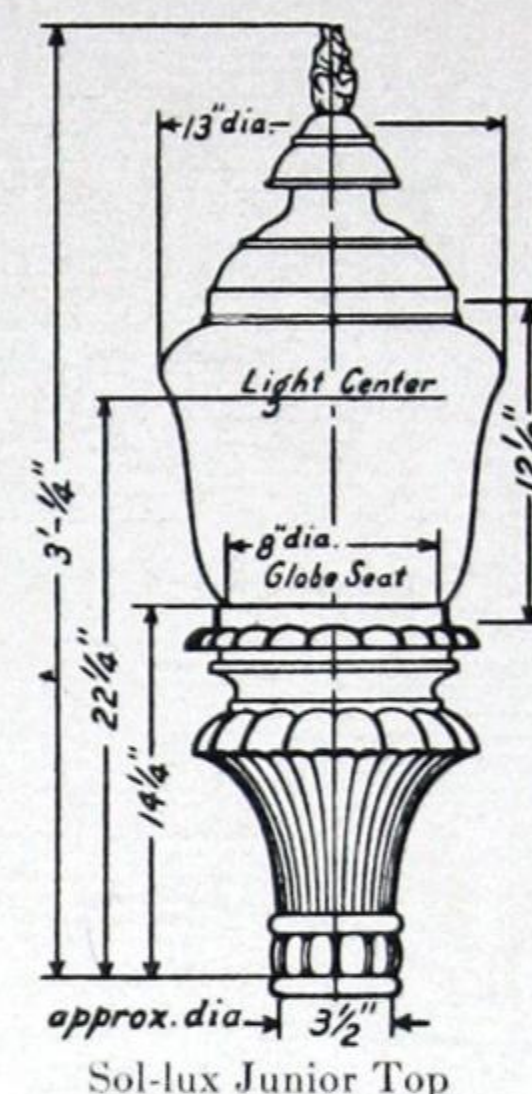
22118	Casing, with 8-inch globeholder.....	20	4.50
22166	†Porcelain disc insulator, without socket.....	3	.70
22116	Egyptian Junior globe (one piece).....	11	6.00
22117	Metal frame for globe (cast iron, enameled black).....	5	3.00
22557	Ventilator.....	5	4.00

* Reactance coils and compensators are designed for 60-cycle circuits; prices for 25-cycle compensators upon application. Compensators for 400-candlepower lamps have taps for both 12 and 15-ampere lamps and 6.6 and 7.5-ampere line.

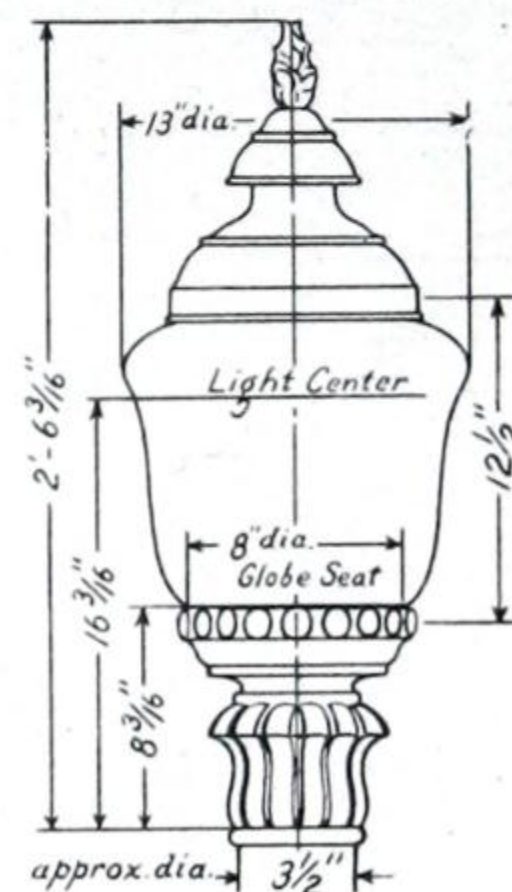
x Park View globeholders will not accommodate compensator or reactance coils.

† A porcelain disc insulator should be used with each casing or globeholder listed. When ordering parts to make combinations other than those listed specify the kind of socket and coil (if any). Add to the price of the disc insulator 50 cents for a medium screw multiple socket, 80 cents for a mogul screw multiple socket, and \$1.80 for a Regent film series socket. When coils are used, add to the price of the disc insulator 80 cents for mogul screw socket with the following: \$8.10 for 100-candlepower reactance coil, \$9.50 for 250-candlepower reactance coil, and \$10.00 for 400-candlepower compensator.

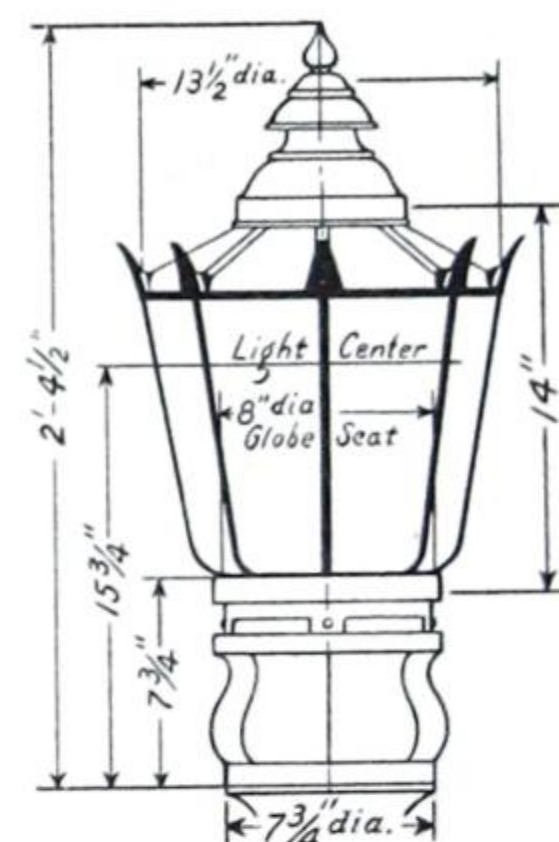
† Casing No. 22372 may be omitted when compensator or reactance coil is not used; in such cases, globeholder ring No. 22173 is used.



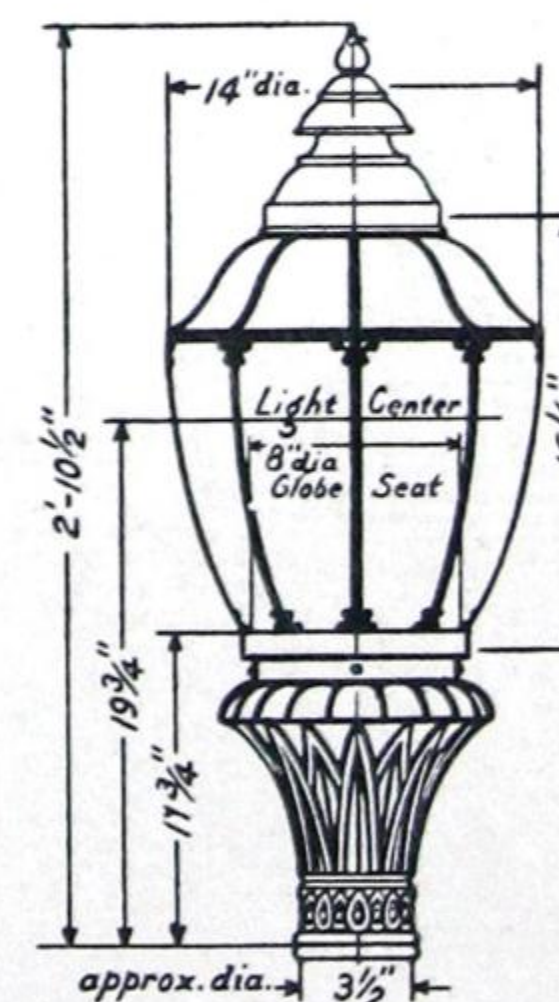
Sol-lux Junior Top



Sol-lux Globe and Ventilator with Park View Globeholder



Octagonal Junior Top



Egyptian Junior Top

All prices f. o. b. factory, South Bend, Ind., and subject to Schedule "I" discounts.



Fig. 22.—The front of this Theatre is lighted with Cutter Sol-lux Fixtures and Single Light Posts.

How to Secure the Maximum Value of Ball Globes

LIGHTING with cluster posts is usually confined to the mercantile centers or the principal business thoroughfares. Store front lighting and sign lights are scattered throughout the business districts. Small bracket-type fixtures are used for lighting entrances to public buildings, stairways, alleys, etc. The globes taken from the

cluster posts may be used with suitable holders and brackets for all such purposes. Signs may be painted on them as required. Suggestions are given in bulletin No. 3281. Cutter Sol-lux Fixtures may be purchased without the glassware and adapted for either interior or exterior illumination and the the present day value of the glassware thereby secured. The lamps in fixtures such as these are usually burned on special occasions so that the increased coal consumption is negligible when compared with the saving effected by converting an installation of cluster posts into single light units.

Write for Cutter Bulletin 3281, showing complete line of Cutter Sol-lux Fixtures and Sign Lights.

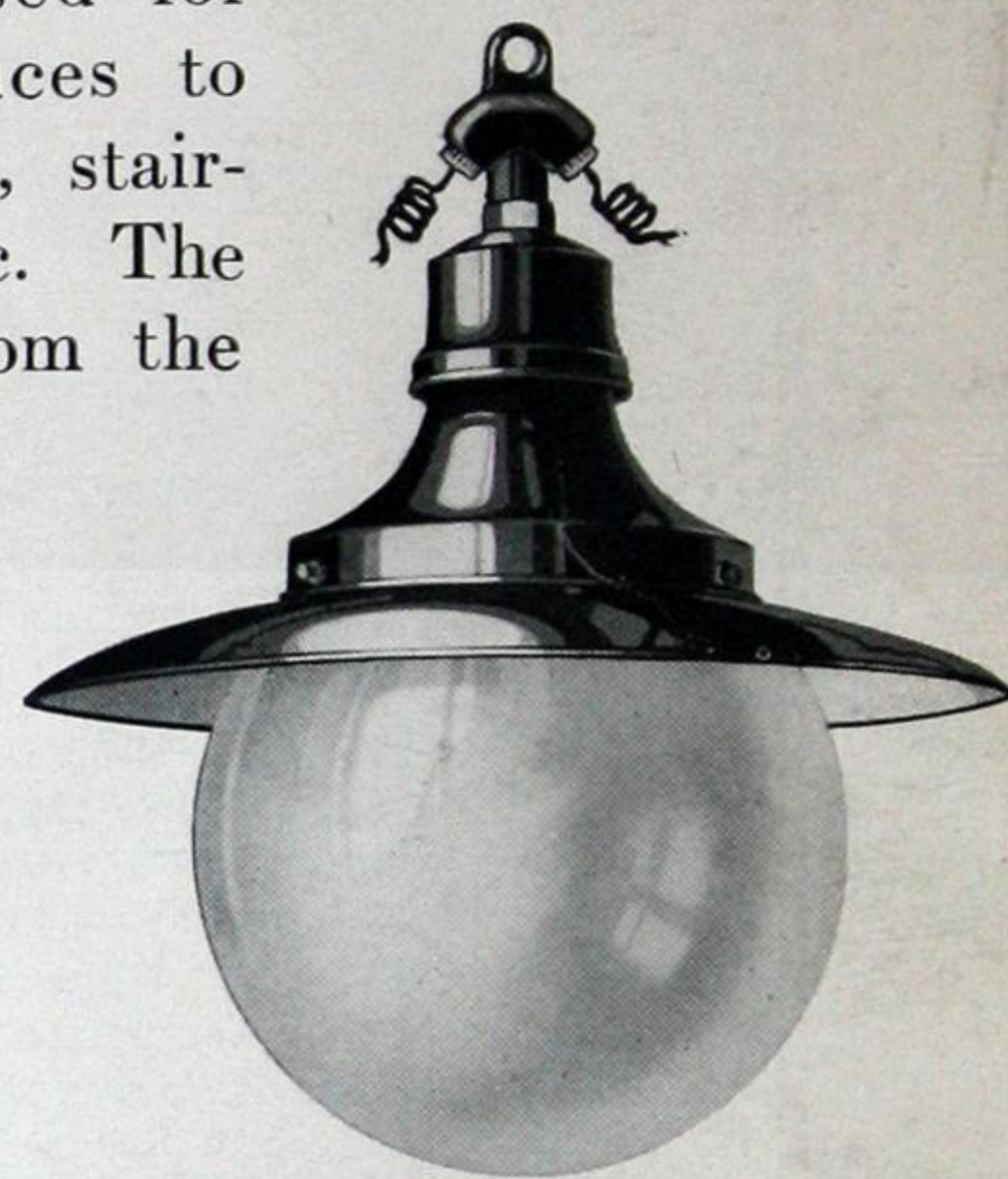


Fig. 23.—Cutter Sol-lux Fixture with 8x12 inch Globe and 18-inch Reflector.

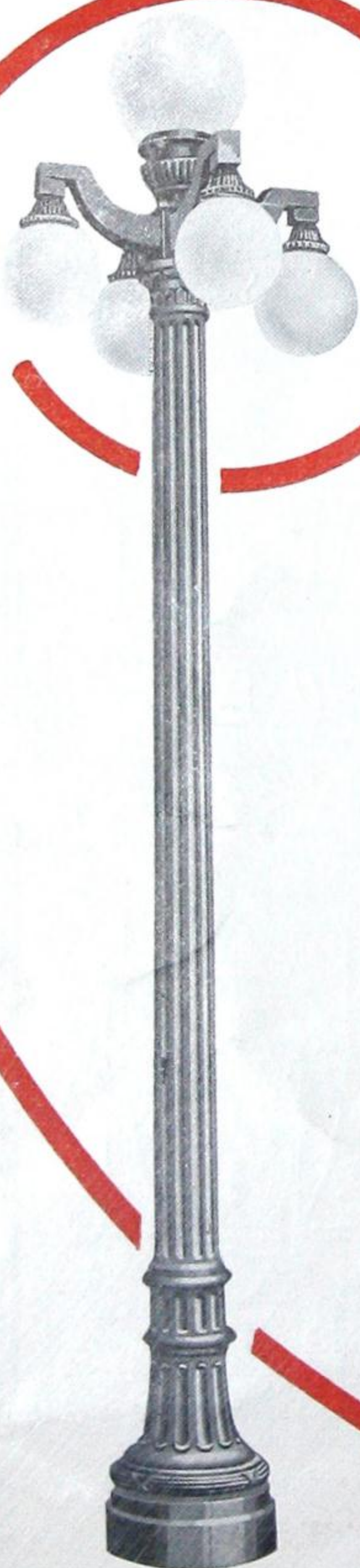


Fig. 24.—5-Light Post

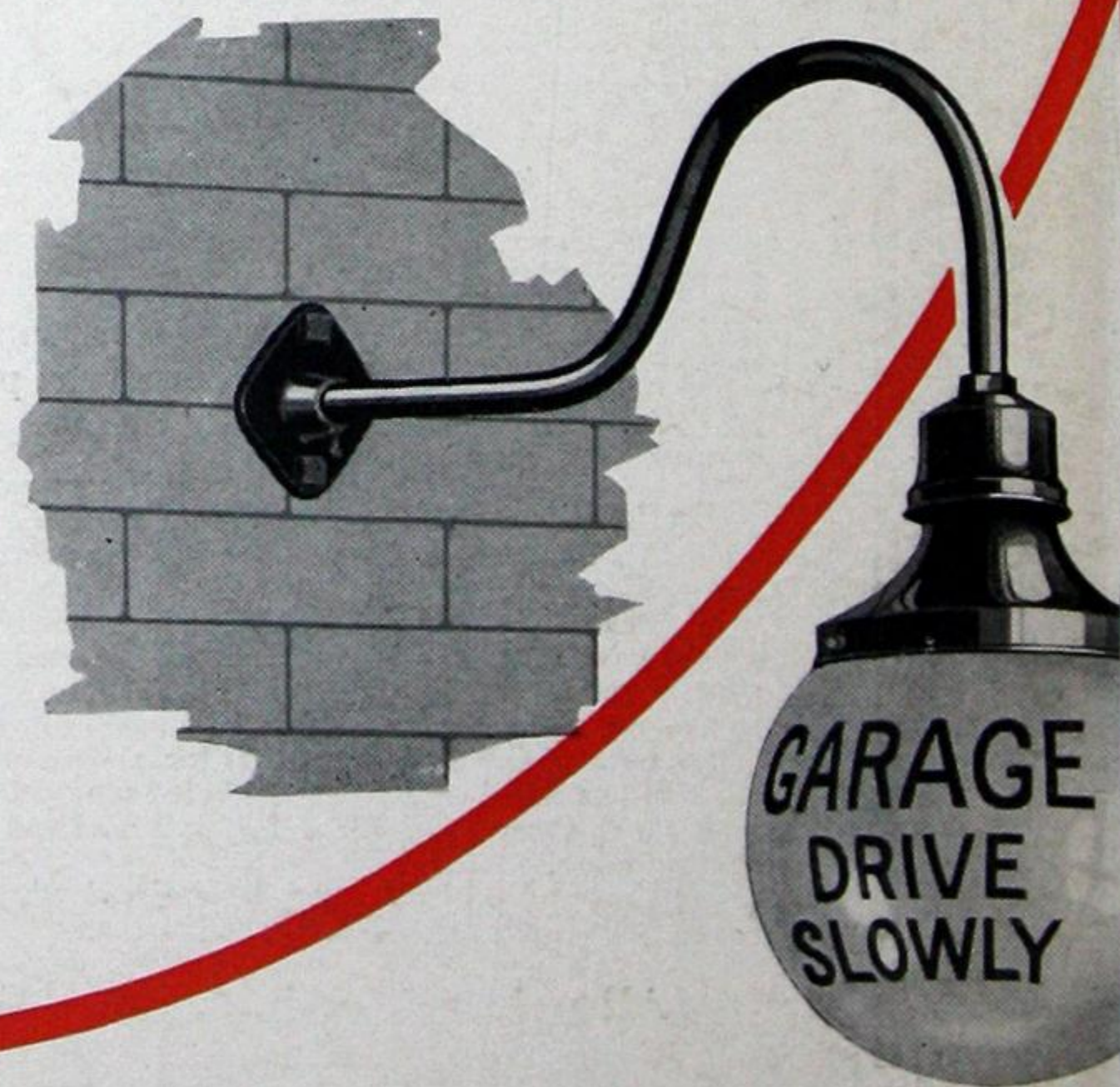


Fig. 25.—Cutter Sol-lux Sign Light.